

Senate Bill X7-7
Compilation of Public Comments on
A2 – Range of Options for Water Measurement Regulation

ISSUE	COMMENT 1	RESPONSE
<p>DWR’s rulemaking process must determine valid techniques to “measure the volume of water delivered to customers” to enable agricultural water suppliers to “adopt a pricing structure for water customers based at least in part on quantity delivered.” If the techniques chosen do not support customer billing, then they will not be consistent with the clear language and intent of the Act.</p> <p>Regulation should spell out a more complete framework for compliance. Section 10608.48(i) directs the Department to “adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement...”</p>	(2) (26)	<p>Even though the adoption of a pricing structure is the duty of the agricultural water suppliers and falls outside the scope of the proposed regulation, DWR is taking into consideration the purpose of requiring water measurement as set by the legislation while developing a range of measurement options. The measurement options and the associated levels of accuracy requirements will need to be sufficient for fulfilling those purposes namely: data reporting and volumetric pricing.</p>
<p>Note of caution... Definitions in the regulation once inserted into the Water code they become defining unless limited to the applicability of the actual regulation, perhaps the following addition would be helpful]. The applicability of the definitions under this Section shall only apply to Section 597.3.</p>	(24)	<p>The applicability of the inserted definitions will be limited to the actual regulation. Proper language will be added to ensure that if needed.</p>
<p>Irrigation methods and infrastructure can vary depending on the region, crops, age, water supply, and topography, amongst other things. As a result, it is difficult, if not impossible, to identify a one-size-fits-all approach to agricultural water measurement. Can DWR set a range of options that accommodate various scenarios, e.g., measure at turnout/lateral, and exempt CVP contractors?</p>	(1), (13), (9)	<p>DWR, through the Agricultural Stakeholders Committee and its Measurement Sub-committee, is developing regulations that would provide for a range of options to accommodate the varied and diverse situations throughout the state while fulfilling the SBx7-7 legislation mandate. Among the special scenarios considered are: measurements at lateral point where farm-gate measurement is not technically or legally feasible; consider that USBR contractors are in compliance if they measure all their water using Bureau approved devices; Require lab/design accuracy standards instead of in-field accuracy standards.</p>

¹ Comment number referenced – see attached list with links to the original comments.

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<p>Although not every section of SBX7-7 implies that it is dealing with surface water, there are no sections that indicate it applies to groundwater. There are no provisions that authorize water suppliers to collect private records, to access private property or specify equipment on private wells and therefore I would suggest that DWR has no authority to request data from private wells to be included in reports. Additionally, incorporating groundwater “deliveries” adds on a significant layer of data and groundwater recharge activities that can potentially span several different projects, districts, regions and not to mention overlapping years which leads to even more potential problems when determining system efficiencies and reporting. The aquifer should be considered a storage facility rather than a conveyance facility and therefore the efficiencies and wasted water that SBX7-7 is geared towards doesn’t apply here.</p>	(20)	<p>Suppliers won’t be required to collect private well records. However, if an agricultural water supplier pumps groundwater then delivers it to its customers, those deliveries are subject to the measurement requirement at the point of delivery to customers. SBx7-7 requires suppliers to measure water deliveries to their customers irrespective of the source of that water whether it be surface water or groundwater.</p> <p>Groundwater recharge is outside the scope of this regulation and is being dealt with under different legislations.</p>
<p>While basin-wide water balances may be useful for state planning purposes, it is clear to us that such a coarse scale of analysis would not allow water suppliers to quantify the water delivered to individual customers, or form a legitimate basis for a volumetric pricing structure. Similarly, measurement at the distribution system lateral may have value for water system managers, but does not meet the intent of the law, as laterals typically supply multiple farms and turnouts.</p> <p>We find the text around measurement to multiple individual customers to be outside the intent of law. The legislation clearly states its intent to require water measurement – not estimation – of sufficient accuracy to support customer billing based at least in part on volume. It is still unclear to us how appropriate price signals can be sent without actually measuring the water provided to individual customers.</p>	(2), (26)	<p>DWR’s judgment is that basin-wide or district-wide measurement does not provide sufficient accuracy to price water at least in part on quantity delivered. Basin-wide or district-wide measurement is too aggregated, and would include too many crops, fields, and other conditions to provide a reasonably accurate estimate of water use by individual customers to be compliant with the provisions of 10608.48. However, DWR believes that basin-level and district-level information remains important for characterizing the efficiency of agricultural water use. (Detailed rationale is included in the A2 Measurement discussion paper.)</p> <p>Measurement at laterals will be accepted only for special cases where farm-gate measurement is not technically or legally feasible. Such exception is only allowed when suppliers demonstrate that: 1) That measurement under section 597.3(a) is not legally accessible or technically feasible and cannot meet the required level of accuracy as specified in that section; and 2) The methodology the supplier will use to apportion the quantities of water delivered to individual customers must account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, crop, and irrigation system.</p>

DRAFT: 2-11-2011

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It is questionable whether a numerical standard for measuring accuracy is in fact required. We are concerned that, if the standard of accuracy is too restrictive, or if the level of accuracy is applied too uniformly, and without accommodation of various agricultural practices and measurement methodologies, this could have the unintended effect of making compliance effectively impossible or lead to slower adoption rates. Is a numerical standard statutorily justified?	(22)	Suppliers that are subject to the requirements must measure the volume of water delivered to customers with sufficient accuracy. <u>Encyclopedia Britannica</u> defines <i>measurement</i> as “the process of associating numbers with physical quantities and phenomena”. Accuracy indicates proximity of measurement results to the true value; and a device is accurate means “capable of providing a correct reading or measurement”. In order to judge whether a measurement (which is numerically represented) is accurate or not, its deviation from the true value (or error) needs to be described using a numerical representation as well.
It will be helpful to get a compilation of accuracy standards of various measurement devices in the market to help make an informed decision on what level of accuracy is reasonable.	(10)	As part of providing background information and data for the ASC and its Measurement Subcommittee, DWR made a request for data on various agricultural water measurement devices and their respective accuracies from ASC/A2 committee members, experts, and agencies with existing agricultural water measurement program. This information will serve in setting informed and realistic accuracy standards for the proposed agricultural water measurement regulations that DWR is pursuing.
There are likely to be certain physical circumstances where measurement at farm delivery gates is technically infeasible or so impractical that measurement at the lateral heading combined with a process for apportioning the lateral flow to individual farms becomes a better option for providing a sufficiently accurate estimate of the farm delivery volume for purposes of aggregate farm delivery reporting and volumetric charging. Obviously where conditions prohibit the practical deployment of any of the technically proven, customary measurement devices, lateral measurement with apportionment becomes a viable choice and perhaps the only reasonable option for these purposes.	(19)	Measurement at laterals will be accepted only for special cases where farm-gate measurement is not technically or legally feasible. However, suppliers have to demonstrate that: 1) That measurement under section 597.3(a) is not legally accessible or technically feasible and cannot meet the required level of accuracy as specified in that section; and 2) The methodology the supplier will use to apportion the quantities of water delivered to individual customers must account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, crop, and irrigation system.

Comment [GD1]: I do not think this a compelling rationale for why a quantitative standard is needed. Obviously for current purposes, existing measurement is “sufficiently accurate” (because most districts are able to report aggregate deliveries and charge volumetrically), yet nobody really knows the accuracy levels being achieved. A more compelling rationale is that a quantitative standard leads to an objective process rather than a subjective one. However, it is clear to most of us that there is very little information about practically attainable measurement accuracy. Furthermore, we know that field measurement-based compliance would be a major, costly challenge for most districts. I conclude that a numeric standard linked to lab-determined accuracy enforced through best management practices is the way to go.

DRAFT: 2-11-2011

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Is the intent of Section 10608.48 “water conservation” through water measurement and subsequent pricing structure?	(12)	The overarching intent of this legislation is water conservation and water use efficiency. Water conservation is highlighted in Chapter 1. General Declarations and Policy and elsewhere in SBx7-7. Section 10608 (e) declaring that “the success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measureable outcomes related to water use or efficiency”. Section 10608.4 requires implementation of specific efficient water management practices (EWMP). Section 10608.48 (a) and (b) require implementation of EWMPs. Water measurement and pricing structure are two critical EWMPs that have to be implemented.
This note will identify a potential problem with Option 2, Standard Based on Farm-Gate Accuracy Measured After Field Installation that is inherent in random sampling. We are concerned with meeting a standard. The greater the range, the more probable it will be that a district will generate in some future set of measurements an average accuracy that is non-compliant. Since the evaluations are assumed to be based on a random selection of measurement devices, any district could conceivably generate such a result. Also, any district may, with good fortune, produce a result that is better than their real accuracy.	(18)	The regulation’s language has been modified so that statistically representative sampling of devices be used instead of random sampling.
How does lab performance or a manufacturer’s specification translate to field performance? any information that you gather regarding field data should also be examined with similar scrutiny. Accuracy data obtained from Ag districts is valuable information as long as it is evaluated considering the operations and facilities of the corresponding district. If a district has a pipeline system that uses all new magnetic meters with an average field measured accuracy of 3% that shouldn’t apply to all districts nor just pipeline districts. Conversely, if an open channel district reports 20% then that shouldn’t apply to others just because they’re open channel systems also	(20)	We recognize that field performance is difficult to determine. As a result, suppliers are required to use measurement devices that meet minimum laboratory or design accuracy standards before field installation. However, those devices shall be appropriate for the site and installed and maintained in a manner consistent with the manufacturer’s recommendations and utilizing best professional practices.

Comment [GD2]: Don’t oversell this. To the extent that water conservation is taken to mean making more water available for other uses, we all know that potential for water conservation is very small where irrigation return flows are recovered.

DRAFT: 2-11-2011

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Why not consider differential measurement standards, the application of which would be determined by irrigation infrastructure in the districts. Differential standards based on existing infrastructure constitute a range, and have an advantage of greater likelihood of meeting the cost effectiveness criterion within the districts.	(3)	Compliance with the measurement requirement isn't subject to cost effectiveness. Nevertheless, DWR solicited from experts and agencies data on various agricultural water measurement devices and their respective accuracies to use in setting informed and realistic accuracy standards. Additionally, differential standards do not provide for an equitable and uniform process.
The proposed recalibration and record keeping requirements will be time consuming and burdensome to implement, not only for each District but also for DWR that will be overseeing the requirements. If the procedures and costs to implement the proposed measurement requirements are too restrictive or burdensome then many will question the value and cost of implementing them.	(16)	Overly prescriptive requirements for calibration and record keeping have been omitted, and suppliers are required to maintain / calibrate their measurement devices in a manner consistent with the manufacturer's recommendations and utilizing best professional practices. Records will be included in the Agricultural Water Management Plans (AWMP) and need to be kept for only two AWMP cycles (i.e., 10 years).
Provide sufficient time for agricultural water suppliers to achieve full compliance with the measurement requirements. The July, 2012 date is not practically feasible. Can DWR have a phased process through which a gradual water measurement program can be implemented?	(13) (9)	The A2 Subcommittee has discussed ways to address the challenges that water suppliers may face in planning, financing, and installing measurement devices. DWR staff has been advised that DWR may not have the authority to include in the regulation a final compliance date that is different from the July 31, 2012 date specified in SBx7-7. DWR will work with the ASC and A2 Subcommittee to explore other ways and options to phased implementation to address the challenges of planning, financing, and installing measurement devices.

Comments on A2 Measurement Range of Options

No	Dated	Organization	Author	Comment
1	May 28, 2010	Agricultural Stakeholders Advisory Committee <i>This is not the SBX Agricultural Stakeholder Committee</i>	Mike Wade	Comment (98 KB)
2	October 21, 2010	Pacific Institute and Natural Resources Defense Council	Juliet Christian-Smith and Edward Osann	Comment (50 KB)
3	October 25, 2010	Santa Clara Valley Water District	Bob Siegfried	Comment (50 KB)
4	October 28, 2010	Organization Environmental Defense Fund	Spreck Rosekrans	Comment (59 KB)
5	October 29, 2010	Agricultural Water Management Council	Mike Wade	Comment (2362 KB)
6	October 29, 2010	Santa Clara Valley Water District	Robert Siegfried	Comment (12 KB)
7	November 11, 2010	Santa Clara Valley Water District	Robert Siegfried	Comment (21 KB)
8	November 16, 2010	Natural Resources Defense Council and Pacific Institute	Ed Osann and Juliet Christian-Smith	Comment (67 KB)
9	November 17, 2010	Organization Center for Irrigation Technology	Peter Canessa	Comment (39 KB)
10	November 17, 2010	Environmental Defense Fund	Spreck Rosecrans	Comment (55 KB)
11	December 10, 2010	Northern California Water Association	Todd Manley	Comment (148 KB)
12	December 13, 2010	Glenn Colusa Irrigation District	Thaddeus L. Bettner	Comment (2.52 MB)
13	December 17, 2010	Alta Irrigation District	Chris Kapheim	Comment (627 KB)
14	December 17, 2010	Kings River Conservation District	David Cone	Comment (85 KB)
15	December 17, 2010	Kings River Conservation District	David Cone	Comment (148 KB)
16	January 4, 2011	Summers Engineering	Roger Reynolds	Comment (42 KB)

17	January 5, 2011	Glenn Colusa Irrigation District	Thaddeus L. Bettner	Comment (130 KB)
18	January 14, 2011	Santa Clara Valley Water District	Robert "Bob" Siegfried	Comment (19 KB)
19	January 17, 2011	Davids Engineering, Inc.	Grant Davids	Comment (409 KB)
20	January 19, 2011	Buena Vista Water Storage District	David Hampton	Comment (49 KB)
21	January 24, 2011	Tulare Irrigation District	Aaron Fukuda	Comment (409 KB)
22	January 25, 2011	Sustainable Conservation	J. Stacey Sullivan	Comment (41 KB)
23	January 25, 2011	Modesto Irrigation District	Walter P. Ward	Comment (128 KB)
24	January 25, 2011	Northern California Water Association	Todd N. Manley	Comment (159 KB)
25	January 26, 2011	Santa Clara Valley Water District	Bob Siegfried	Comment (24 KB)
26	January 26, 2011	Pacific Institute and Natural Resources Defense Council	Juliet Christian-Smith and Edward R. Osann	Comment (88 KB)